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BRIEF

Promoting Assistive Technology in an Outcome Driven Model of Service Delivery

Children and youth with disabilities and special health care needs (SHCN) have complex habilitative, educational, and health care needs requiring multiple services throughout their lives. Providers of services to children and youth with disabilities underutilize assistive technology (AT) and assistive technology services. This underutilization has a significant impact on how well and how easily children and youth with disabilities are integrated in home, school, and community activities. This issue brief outlines a ten-step framework that service providers can use to guide them in determining the fit between the child's needs and AT and/or AT services. The framework, based on a contemporary outcome driven model of service delivery, was generated by a review of the relevant literature and data collected from focus groups of rehabilitation providers.

What is Assistive Technology?

Assistive technology is any product that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities. Examples include items as simple as a suction cup rattle as well as sophisticated computerized communication devices. AT services include the services and supports necessary to determine and sustain the appropriate technology to meet an individual's needs.

Foundations of an Outcome Driven Model of Assistive Technology

Traditionally, the choice of therapeutic intervention has been made using an impairment-oriented method of decision-making. This approach promotes remediation of delay and facilitation of normal movement patterns. Contemporary models of decision-making support an outcome-driven system in which intervention strategies are

developed to promote the attainment of the desired outcome and maximize the skills of the individual. Compensatory strategies such as assistive technology are not prescribed only when remediation and facilitation strategies are unsuccessful, but are given equal priority in treatment planning. Intervention strategies, including assistive technology, are determined within the context of the task in an outcome-driven approach.

The Consortium Model

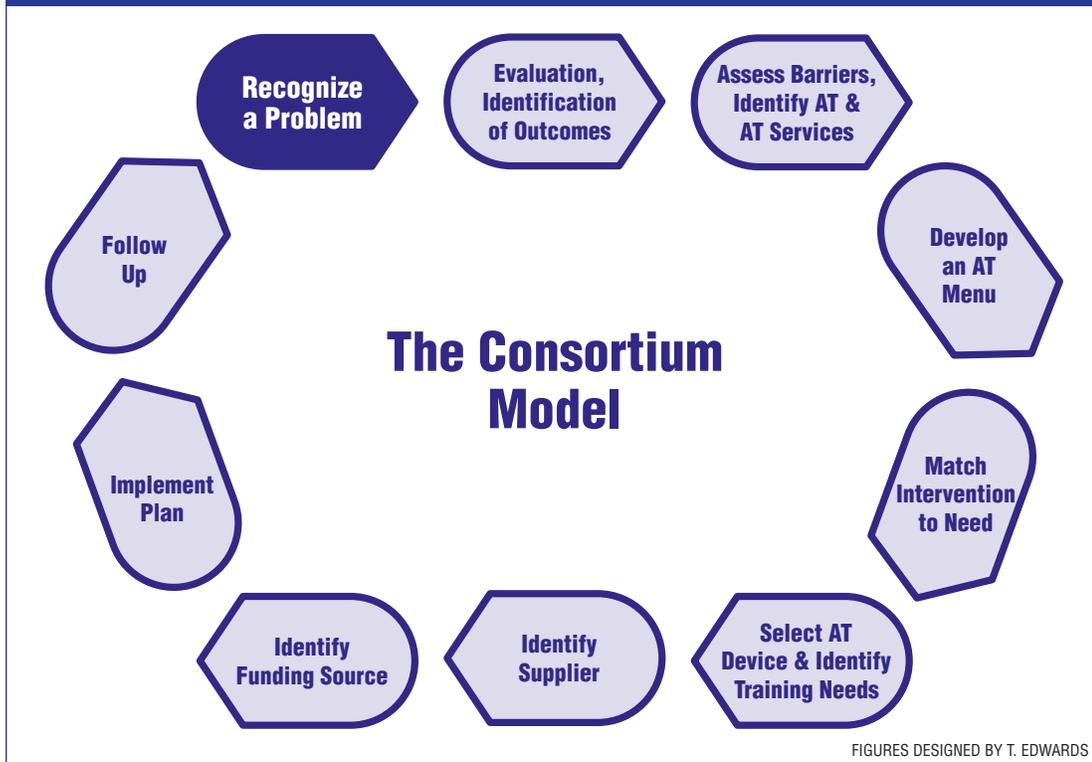
The Consortium Model presented here is a ten-step procedure designed to guide service providers through a series of decisions regarding AT and AT services for children and youth with special needs.

Based on the principles of outcome-driven decision making, AT is a strategy used to foster independence. Providers make recommendations for AT and AT services based on what the family and team would like the child to accomplish within a set amount of time. Teams must consider AT and AT services that address: first, the barriers preventing desired outcomes; next, the opportunities for promoting the achievement of the outcomes; and lastly, remediation of impairments.

An outcome-driven model suggests that assistive technology is appropriate when a device is:

- a) related to specific and clearly defined goals that are meaningful to the child and family,
- b) takes into consideration practical constraints, such as the environment and funding resources, and
- c) results in the child achieving desired outcomes

FIGURE 1: THE CONSORTIUM MODEL



1 Recognize a Problem	2 Evaluation of Needs
<ul style="list-style-type: none"> • Overview of AT 	<ul style="list-style-type: none"> • Disability • Child/family needs, expectations • Models of intervention • Environment • Assessment techniques • Referral sources
<ul style="list-style-type: none"> • Child • Family • Teacher • Primary therapist • Other service providers 	<ul style="list-style-type: none"> • Family/child • All service providers

STEP 1: Recognition of a Problem

Family members, caregivers, or pediatricians are usually the first to recognize that a child or youth is having difficulty in performing developmental tasks or functional activities and they may refer the child to a developmental specialist, early intervention program or other developmental service providers for a comprehensive evaluation to determine eligibility for services and type of services and supports needed.

STEP 2: Evaluation and Outcome Determination

A comprehensive evaluation will delineate the overall developmental level of the child and provide a differential diagnosis if possible. The desired functional outcomes will be determined at this point. The outcomes, not the child’s age or developmental level, will guide the team in deciding if AT or AT services would be appropriate.

STEP 3: Assessment/Identification of AT and AT Services.

There are technology options to

assist a child in many activities: communication, mobility, positioning and seating, activities of daily living, recreation, and problem solving. In an outcome driven model the full range of services, which can facilitate the child’s timely achievement of the desired outcomes, will be identified at this time. AT should be regarded as one of many strategies available to meet developmental and functional outcomes. It may be necessary to refer the child to experienced providers of AT as it is unlikely that general developmental service providers will have the skill to comprehensively assess AT needs. This collaboration between AT specialists and other service providers increases the likelihood that appropriate AT and AT services will be integrated into the child’s service plan.

STEP 4: Develop an AT Menu

Assistive technology is any device used to increase, maintain or improve functional abilities. Some devices are

“low” tech, such as a suction cup rattle, and are readily available at Toys “R” Us, Wal-Mart and other discount stores; others are “high” tech, such as computerized communication devices, and are available through more specialized suppliers.

Electronic communication, especially through the Internet, has greatly increased the availability of information about an extensive array of AT products. For example, Abledata (www.abledata.com) is a national online database listing a wide variety of AT products. Prior to searching out specific devices, it is imperative that the team develops a list or menu of possible devices and services that would assist in promoting the desired outcomes. This menu will be used to match a specific device(s) to the child’s individual need, family circumstances, and task constraints.

STEP 5: Match AT and AT Services to the Child and Family Needs

This step is often time consuming. Prior to purchasing a device, it is

FIGURE 2: FRAMEWORK FOR DECISION-MAKING FOR AT & AT SERVICES

DECISION-MAKING STEPS							
3	4	5	6	7	8	9	10
Assess Barriers, Identify AT & AT Services	Consider AT Menu	Match AT & AT Service to Need	Select AT, Identify Training Needs	Secure Suppliers	Secure Funding for AT & AT Services	Implement AT	Follow Up
PRIMARY CONTENT AT EACH STAGE							
<ul style="list-style-type: none"> • Environmental • Context • Task • Child characteristics 	<ul style="list-style-type: none"> • Technology options • Strategy options • Training (to use device) requirements 	<ul style="list-style-type: none"> • Device specific knowledge • Service delivery systems • Technology options • Child/family needs, expectations • Disability • Environment 	<ul style="list-style-type: none"> • Child/family needs, expectations • Availability of providers 	<ul style="list-style-type: none"> • Access to suppliers • Product comparison • Rehab engineering • Customer service 	<ul style="list-style-type: none"> • Service delivery systems • Funding streams • Policy • Family's knowledge of financials 	<ul style="list-style-type: none"> • Child/family needs, expectations • Device operations 	<ul style="list-style-type: none"> • Consumer satisfaction • Product evaluation • Continuous quality improvement
PRIMARY HUMAN RESOURCE SUPPORT AT EACH STAGE							
<ul style="list-style-type: none"> • Family/child • Service providers 	<ul style="list-style-type: none"> • Suppliers 	<ul style="list-style-type: none"> • Suppliers • Family • Child • Service providers 	<ul style="list-style-type: none"> • Child/family • Other service providers • Suppliers 	<ul style="list-style-type: none"> • Customer service representative 	<ul style="list-style-type: none"> • Administrative authority 	<ul style="list-style-type: none"> • Family • Child • Other service providers • Customer 	<ul style="list-style-type: none"> • Family • Child • Other service providers • Customer service representative

important to include a trial period with one or more products from the menu developed in Step 4. This trial period is critical in determining which product will best meet the child's individual needs and be accepted by the family. Some technologies may need to be used for a period of time before the team (including the child and family) can determine the actual usefulness of the device. For some children it may be necessary to try a variety of devices or services. Each experience needs to be carefully evaluated with regard to the likelihood that the particular product will assist the child in accomplishing the outcome. Ruling out a device during a trial period is a much more cost-effective step than abandoning a purchased product because it did not actually meet the child's need. As part of an outcome driven model, it is important to determine the benefit of a device within the actual setting in which it will be used.

STEP 6: Select a Device and Identify AT Services

Once all the options have been reviewed and undergone a trial period, the specific device is selected and the training needs of the child, family, and other care providers in relation to the device are outlined. The most common reason for abandonment of an AT device is lack of training on how to appropriately use the device and integrate it into every day activities. A variety of people must be trained: child, family, other caregivers, teachers, etc. The importance of an individualized plan delineating the frequency of training for each provider or caregiver and the strategies that will be employed cannot be stressed enough. In order for the device to be useful, training must take place within the usual settings, activities and routines of the child.

STEP 7: Identification of a Supplier

Although this step is closely aligned with Step 6, the decision on which supplier of a device will be chosen

should be made following the selection of the device. Following a period of trial use, the team can make a recommendation for a specific product. For products that were designed specifically to meet the needs of children with a disability, sale and distribution may only be through specific suppliers. Suppliers should be knowledgeable in the advantages and disadvantages of a variety of devices, not just the devices they are authorized to sell and distribute. They should have a proven track record of working with therapists. Provider teams should develop collaborative relationships with a variety of vendors or suppliers of equipment.

Because many devices are highly sophisticated, careful attention should be given to vendors who also provide maintenance and teach caregivers basic maintenance and care for the equipment. No matter how successful the child is with a particular piece of technology, if the device is not in working order, it

will not be useful to the child. Reliability and accessibility are two key features that a vendor of AT devices should possess.

STEP 8: Identify a Funding Source

Funding can present a major barrier to accessing AT. There are four factors that influence securing a funding source: a) the high cost of the equipment, b) vague or conflicting eligibility criteria imposed by funding sources, c) professionals' lack of knowledge, and d) difficulty accessing third party payment sources.

Many service providers immediately consider the "third party payment requirements", medical insurance, school district or agency purchasing regulations, before a match between product and need has been made. When the issue is resource allocation, parents, families and all team members should, initially, be educated on all the available technology options, and then decide how resources are best allocated to meet the child's needs. Resource allocation can include the family's decision to use private funds to purchase the product directly. In some situations, a discounted price and a much more timely delivery of the product can be arranged when private funds are being used for a "direct sale." In some instances, a cost-sharing model is used, using medical insurance and other funds such as

savings or charitable contributions. There are government funding programs, Medicaid for example, which will pay for "medically necessary" AT. If intended to meet a child's educational needs, the technology and AT services necessary to benefit from the device need to be written into the child's IEP to secure school district funding under the Individuals with Disabilities Education Act.

STEP 9: Implementation

On the day a specific product is finally delivered, many on the team may feel they have reached the conclusion of the process. However, if the child is to be truly successful using the technology, the delivery day actually marks just the beginning. Ultimately, implementation should be the seamless use of the product by the child to complete the desired activities. To achieve this end, however, implementation must begin with training for the child and family on how to use the specific product.

Teams using the outcome driven approach should have clearly defined and measurable goals to monitor progress throughout the implementation phase. Teams who have invested the time and effort to clearly identify mutually agreeable outcomes, participated in product trials and outlined the training needs, should be able to monitor

the child's progress toward attaining the expected outcomes. There will still be times when the device or the training will need to be modified to improve the outcome. However, clearly defined outcomes and careful follow-up and assessment of use of the product will indicate if the AT and AT services are beneficial to the child.

STEP 10: Follow-up

An essential element of any thorough intervention plan is follow-up or continuous quality improvement. To avoid negative consequences of using assistive technology, the team must take the time to obtain continuous feedback from the technology users. Ongoing input from families and, as appropriate, the child, will decrease the likelihood of underutilization or abandonment of AT. This process will either validate or indicate the need to modify the original plan. Additionally, as the child successfully uses the technology other needs may become evident requiring adaptation of the device or additional training in its use. Assistive technology may help the child to be more integrated in the community, more independent, and more functional. Given the ongoing development of a child, the care providers and therapists may need to regularly revisit the AT plan, adapting the plan to meet the evolving needs of the child.

This brief is one in a series that cover disability issues among children and youth with disabilities and special health care needs.

These publications can be obtained directly from the Consortium for Children and Youth with Disabilities and Special Health Care Needs or at our website www.consortiumnrrtc.org. The Consortium is funded by the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education.

*For further information on this brief, please contact Toby Long, Ph.D., P.T. (longt@georgetown.edu) at the Georgetown University Center for Child and Human Development. The complete journal article, Integrating Assistive Technology Into an Outcome-Driven Model of Service Delivery, is available in the October-December 2003 issue of *Infants & Young Children*.*



For further information on The Consortium for Children and Youth with Disabilities and Special Health Care Needs, its partners or projects, please contact Tammy Edwards at nrrtc@georgetown.edu



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